

# AMENDMENTS TO THE CLAIMS

Please cancel claims 1-32

33. **(New)** A pulsed power supply for an electrochemical cell having an anode and a cathode, comprising means for generating a repeating sequence of voltages across said anode and said cathode, each said sequence including a first cell voltage regime consisting of a voltage sufficient to enhance cathodic absorption of hydrogen and a second voltage regime consisting of at least one voltage pulse which is at least two times the voltage of the first cell voltage regime in magnitude with a duration no greater than 0.10 seconds.

34. **(New)** The pulsed power supply of Claim 33 wherein the voltage of said first cell voltage regime ranges from about 1 to about 10 volts, and the voltage pulse of said second cell voltage regime ranges from 2 to 1000 times the voltage of said first cell voltage regime, and the total duration of said second voltage pulse ranges from about 0.5 nanoseconds to about 0.10 seconds.

35. **(New)** The pulsed power supply of Claim 33 wherein said pulsed power supply is operatively arranged to dovetail said second cell voltage regime onto said first cell voltage regime.

36. **(New)** The pulsed power supply of Claim 33 wherein said pulsed power supply is operatively arranged to superimpose said second cell voltage regime onto said first cell voltage regime.

37. **(New)** The pulsed power supply of Claim 34 wherein said pulsed power supply is operatively arranged to dovetail said second cell voltage regime onto said first cell voltage

regime.

38. **(New)** The pulsed power supply of Claim 34 wherein said pulsed power supply is operatively arranged to superimpose said second cell voltage regime onto said first cell voltage regime.

39. **(New)** The pulsed power supply of Claim 33 wherein each said sequence further includes a positive voltage sufficient for cleaning said anode.

40. **(New)** The pulsed power supply of Claim 33 wherein each said sequence further includes a positive voltage sufficient for cleaning said cathode.

41. **(New)** The pulsed power supply of Claim 33 wherein said pulsed power supply is operatively arranged to re-equilibrate the cathode in a region of zero potential.

42. **(New)** The pulsed power supply of Claim 34 wherein said pulsed power supply is operatively arranged to re-equilibrate the cathode in a region of zero potential.

43. **(New)** The pulsed power supply of Claim 39 wherein said pulsed power supply is operatively arranged to apply a negative potential for further cathodic absorption of hydrogen.

44. **(New)** The pulsed power supply of Claim 40 wherein said pulsed power supply is operatively arranged to apply a negative potential for further cathodic absorption of hydrogen.

45. **(New)** A pulsed power supply for an electrochemical cell

having an anode and a cathode, comprising:

a triple power supply having a first low voltage direct current supply, a second low voltage direct current supply, and a third high voltage direct current supply;

an oscillator coupled to and powered by said second low voltage direct current supply, operatively arranged to provide a train of timing pulses;

a binary counter operatively arranged to receive said timing pulses from said oscillator;

a decoder coupled to said binary counter and operatively arranged to count said timing pulses; and,

a current generator coupled to and controlled by said decoder, said current generator operatively arranged to provide oscillating pulsed potentials to said anode and said cathode.

46. **(New)** The pulsed power supply recited in Claim 45 wherein said oscillating pulsed potentials comprises a repeating sequence of voltages, each said sequence including a first cell voltage regime consisting of a voltage sufficient to enhance cathodic absorption of hydrogen and a second voltage regime consisting of at least one voltage pulse which is at least two times the voltage of the first cell voltage regime in magnitude with a duration no greater than 0.10 seconds.

47. **(New)** The pulsed power supply recited in Claim 46 wherein the voltage of said first cell voltage regime ranges from about 1 to about 10 volts, and the voltage pulse of said second cell voltage regime ranges from 2 to 1000 times the voltage of said first cell voltage regime, and the total duration of said second voltage pulse ranges from about 0.5 nanoseconds to about 0.10 seconds.

48. **(New)** The pulsed power supply recited in Claim 45 wherein

said anode and cathode are connected via electronic switching circuitry to all three of said power supplies in order that oscillating potentials of varying polarity may be impressed across said anode and cathode over time.

49. **(New)** The pulsed power supply recited in Claim 45 wherein said first low voltage direct current power supply is a 12 Volt power supply.

50. **(New)** The pulsed power supply recited in Claim 45 wherein the second low voltage direct current power supply is a 12 Volt power supply.

51. **(New)** The pulsed power supply recited in Claim 45 wherein the third high voltage direct current power supply is a 1000 Volt power supply.